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SERIAL NUMBER 077546,547	FILING DATE 06/29/90	FIRST NAMED INVENTOR RAMANUJAN	R	ATTORNEY'S SECRET NO. 00000000
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NEW YORK, NY 10004

RAY, G EXAMINER

ART UNIT PAPER NUMBER

04/15/92

DATE MAILED:

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- ☒ Notice of References Cited by Examiner, PTO-892.
- ☒ Notice of Art Cited by Applicant, PTO-1449.
- ☐ Information on How to Effect Drawing Changes, PTO-1474.
- ☒ Notice re Patent Drawing, PTO-948.
- ☐ Notice of Informal Patent Application, Form PTO-152.
- ☐ \_\_\_\_\_

Part II SUMMARY OF ACTION

1. ☒ Claims 1-36 are pending in the application.

Of the above, claims \_\_\_\_\_ are withdrawn from consideration.

2. ☐ Claims \_\_\_\_\_ have been cancelled.

3. ☐ Claims \_\_\_\_\_ are allowed.

4. ☒ Claims 1-36 are rejected.

5. ☐ Claims \_\_\_\_\_ are objected to.

6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed on \_\_\_\_\_, has been ☐ approved. ☐ disapproved (see explanation).

12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

4-14-92

Serial No. 07/546,547

-2-

Art Unit 2308

1. Claims 1-36 are presented for examination.
2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The examiner believes that the title of the invention is broad.
3. This application has been filed with informal drawings which are acceptable for examination purposes only. See PTO-948 for objections to the drawings. Formal drawings will be required when the application is allowed.

Furthermore, the drawings are objected to by the examiner because element 15 of Fig. 1, element 45 of Fig. 2 and elements 45 and 50 of Fig. 3 lack suitable legends. Note 37 C.F.R. § 1.84 (g).

4. Claims 1-36 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The examiner notes the following ambiguities.

In general, applicant has recited some elements in the claims without showing as to how they contribute or coact with the rest of the claimed structure to perform the claimed objective. Applicant has failed to adequately set forth input/output connection and functional relationships between the various claimed elements.

As per claim 1, the phrase "a plurality of bus elements" (line 2) is vague and indefinite because it does not particularly point out as to what are these bus elements.

Furthermore, the phrase "a first plurality of uni-directional point-to-point buses coupling the bus elements to the central unit bus inputs" (lines 6-8) is vague and indefinite because it does not point out the direction, i.e., it is unclear if the direction of some of the buses are from the bus elements to the central unit and some of the buses are from the central to the bus elements. The paragraph (d) of the claim has also similar problems. Clarification and/or rephrasing is required.

Furthermore, it is unclear as to how the "arbitration logic" is connected to the rest of the claimed structure.

Moreover, the phrase "arbitration logic granting the bus elements access through the central unit one at a time" is a statement of desired result because it is unclear as to how the arbitration logic grants bus access to the bus element. Do the bus elements request first to the arbitration logic? Clarification and/or correction is required. No new matter should be added.

As per claim 2, it is unclear as to what the "state device" (line 2) contributes in the claim.

As per claims 4-7, these claims have similar problems as in claim 2.

Art Unit 2308

As per claim 21, it is unclear as to what the "scheduling logic" (line 3) contributes in the claim.

As per claims 3, 8-20, 22, 23 and 26, these claims incorporate the deficiencies of the parent claim.

As per claim 24, the phrase "said port select logic" (line 2) lacks proper antecedent basis.

As per claim 25, applicant should use the definition of the abbreviation "FC" along with the abbreviation in parenthesis first before using the abbreviation by itself anywhere in the claim.

As per claims 27-28, these claims are improperly dependent claims. Claim 27 depends on claim 28 and claim 28 depends on claim 27. Note MPEP 608.01(n), section B.

As per claim 29, this claim incorporates the deficiencies of the parent claim.

As per claim 30, this claim has similar problems as in claim 1.

As per claims 31-32, these claims incorporate the deficiencies of the parent claim.

As per claim 33, this claim has similar problems as in claim 1.

Furthermore, it is unclear as to what performs the steps of "coupling" and "selecting". A tangible item or machine element is not claimed which performs the above steps. The invention as

Art Unit 2308

claimed cannot function by itself.

As per claim 34, this claim incorporates the deficiencies of the parent claim.

As per claim 35, the phrase "the central processing unit" (line 4) lacks proper antecedent basis because earlier a plurality of central processing units are shown.

As per claim 36, this claim is improperly dependent because it depends on itself. Note MPEP 608.01 (n), section B.

5. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

6. Claims 1-19 and 30-35 are rejected under 35 U.S.C. § 103 as being unpatentable over US Patent 4,837,682 issued to Culler in view of US Patent 4,470,114 issued to Gerhold.

As per claim 1, Culler teaches the claimed:

"a plurality of bus elements": Culler's plurality of bus

elements (See Fig. 6, elements 508, 544, 548, 522 and 528);

"a central unit having a plurality of bus inputs and an output": Culler's central unit having a plurality of bus inputs and at least one output (See Fig 5, element 600); and

"arbitration logic granting the bus elements through the central unit": Culler's arbitration logic granting access to bus elements (See col. 8, lines 36-42).

The difference between the instant claim and the reference of Culler is that the reference does not explicitly show the limitations of "a first plurality of uni-directional point-to-point buses ... and a second plurality of uni-directional point to point buses ..." (lines 6-11). However, Gerhold in a similar system teaches uni-directional buses between devices (See col.4, lines 49-51). It would have been obvious to one of ordinary skill in the data processing art at the time the invention was made to implement uni-directional buses rather than bi-directional buses because such modification will help to accomplish efficient high speed processing (Gerhold teaches that in col. 8, lines 5-7). Applicant's submitted prior art WO-A-8 704 826 also shows uni-directional buses (See Fig. 2).

Furthermore, the above prior art does not explicitly show "coupling at least one of the inputs to the output". However, this can be interpreted as a "special interrupt" trying to get

access directly by-passing an arbitration logic which is well within the skill of ordinary person in the data processing art. Evidence of this is provided by US Patent 5,072,363 issued to Gallagher (See col. 2, lines 10-13). It would have been obvious to one of ordinary skill in the data processing art to implement the above feature in the above prior art of Culler in view of Gerhold because the prior art of Gallagher shows several types of arbitration scheme suitable for individual systems (See col. 2, line 61-col. 3, line 14 of Gallagher) and to select anyone is a matter of specific design choice.

As per claims 2-4, the limitations of the claims, i.e., "system further includes a state device" (claim 2), use of "OR gate" (claim 3), "multiplexer" (claim 4) do not patentably distinguish over the prior art because these are art recognized equivalents and thus it is a matter of specific engineering choice.

As per claims 5-19, these claims are rejected for similar reasons as in claims 2-4.

As per claim 30, this claim is rejected for similar rationale as in claim 1.

As per claims 31-32, these claims are rejected for similar reasons as in claims 2-4.

As per claim 33, this claim recites a method which parallels

Art Unit 2308

apparatus claim 1. In teaching the construction and use of the device the prior art of culler in view of Gerhold inherently teaches a corresponding method.

As per claim 34, culler teaches the claimed:

"wherein the bus elements include a plurality of central processing units and a shared memory": Culler's bus elements include a plurality of central processing units and a shared memory (See Fig. 6).

As per claim 35, Culler teaches the claimed:

"selecting step further comprises selecting between the inputs on the first buses from the central processing unit and the bus from the memory": Culler's selecting inputs from the processors and memory (See col. 8, lines 12-25).

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is urged to consider the references. However, the references should be evaluated by what they suggest to one versed in the data processing art, rather than by their specific disclosure.

Furthermore, the prior art submitted by the applicant has been considered by the examiner and made of record in the file with the exception of the references DEA 3340123 and DEA 3935707. Applicant should provide an english translation of the above references in order to be considered by the examiner.



Serial No. 07/546,547

-9-

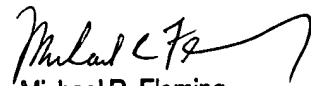
Art Unit 2308

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gopal C. Ray whose telephone number is (703) 308-1654.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0754.

*GCR*

GCR  
April 14, 1992

  
Michael R. Fleming  
Supervisory Patent Examiner  
Group 230